

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. - 10. (canceled)

11. (currently amended) A method for monitoring a control process executed by a control unit for an injection-molding process, the method comprising the steps of:

(a) acquiring, using at least one sensor, actual values of at least one process variable of the injection-molding process, the actual values of the at least one process variable comprising at least one selected from the group consisting of temperature, pressure, feed rate, and rotational speed; and

(b) transmitting the acquired actual values of the at least one process variable to the control process and transmitting the acquired actual values from the control process to a monitoring process executed by a computer for monitoring the control process;

(c) evaluating the transmitted actual values,

(d) determining, based on the evaluated actual values, at least one setpoint value comprising at least one selected from the group consisting of temperature variations, pressure variations, feed rate variations, and rotational speed variations,

(e) transmitting the at least one setpoint value to the control process, and

(f) receiving at the computer at least one input from an operator, ~~and~~ sending the received at least one input to the control process, and executing the at least one input virtually in parallel with the execution of the monitoring process,

wherein monitoring the control process, evaluating the transmitted actual values and determining the at least one set point value are performed by the computer.

12. (canceled)

13. (previously presented) The method according to claim 11, further comprising the step of receiving at the computer at least one output from the control process and sending the received at least one output to an operator virtually in parallel with the execution of the monitoring process.

14. (previously presented) The method according to claim 11, wherein receiving and sending the at least one input is executed by the computer under an operating system comprising non-real-time capabilities.

15. (previously presented) The method according to claim 13, wherein receiving and sending the at least one output is executed by the computer under an operating system comprising non-real-time capabilities.

16. (previously presented) The method according to claim 11, wherein the control process comprises a software process, the software process executed by the computer under an operating system comprising real-time capability, the software process executing virtually in parallel with transmitting the actual values acquired by the control process to the computer for executing the monitoring process.

17. (previously presented) The method according to claim 11, wherein the monitoring process is carried out using a computer program, the computer program executed on the computer.

18. (currently amended) A system capable of interfacing with an operator for controlling an injection-molding machine and comprising a plurality of sensors for acquiring actual values associated with an injection-molding process, the system comprising:

(a) a control unit, for controlling the injection-molding machine, in communication with the plurality of sensors, the control unit having at least one input and at least one output, wherein the acquired actual values is associated with the injection-molding process and received by the at least one input; and

(b) a computer in communication with the control unit and receiving the acquired actual values associated with the injection-molding process from the at least one output associated with the control unit, wherein the computer evaluates and monitors the received actual values associated with the injection-molding process and executes the at least one input virtually in parallel with receiving at least one input from the operator and wherein the computer determines, based on the evaluated actual values, at least one setpoint value for the injection-molding process.

19. (previously presented) The system according to claim 18, wherein the at least one input receives the acquired values in real time, and wherein the computer receives the acquired values from the at least one output in real time.

20. (previously presented) The system according to claim 18, wherein the computer is configured for receiving at least one operator input and for passing the at least one operator input to the control unit.

21. (previously presented) The system according to claim 18, wherein the computer comprises a first computer program for monitoring the received actual values associated with the injection-molding process and a second computer program for sending at least one output received from the control unit to the operator, and wherein the second computer program sends at least one input received from the operator to the control unit.

22. (previously presented) The system according to claim 21, wherein at least one of the first computer program of the computer and the second computer program of the computer run on a non-real-time operating system.

23. (previously presented) The system according to claim 18, wherein the control unit comprises a real-time operating system.

24. (canceled)

25. (previously presented) A computer for controlling and monitoring an injection-molding machine having associated therewith a plurality of sensors for acquiring actual values of process variables associated with an injection-molding process, the computer comprising:

(a) a first computer program for executing on the computer a software process for controlling the injection-molding process, wherein the computer, while executing the first computer program, receive the acquired actual values from the plurality of sensors and transmits the received actual values to a second computer program; and

(b) the second computer program for executing on the computer a monitoring procedure based on the acquired actual values associated with the injection-molding process, wherein the computer, while executing the second computer program, receives the actual values transmitted by the first computer program,

wherein the monitoring procedure and the software process are executed in parallel,

wherein the computer interfaces with an operator, the computer further comprising a third computer program for sending at least one input received from the operator to the first computer program executing the software process virtually in parallel with the execution of the monitoring procedure, and

wherein the computer, based on the actual values, determines and stores setpoint values for the process variables associated with the injection-molding process.

26. (canceled)

27. (previously presented) The computer according to claim 25, wherein the computer interfaces with an operator, the computer further comprising a fourth computer program for receiving from the first computer program at least one output for the operator.

28. (previously presented) The computer according to claim 25, wherein the first and second computer programs are executed under an operating system having real-time capability.

29. (previously presented) The computer according to claim 25, wherein the process variables associated with the injection-molding process comprise at least one of the group consisting of temperature, pressure, speed, and feed rate.

30. (previously presented) The computer according to claim 25, further comprising stored setpoint values, wherein the setpoint values comprise at least one of the group consisting of temperature variations, pressure variations, and feed rate variations.

31. (previously presented) A method of monitoring an injection-molding process associated with an injection-molding machine by utilizing a control unit, the control unit in communication with a plurality of sensors for sensing and acquiring actual data associated with the injection-molding process and for transmitting the acquired data to a monitoring procedure, the method comprising the steps of:

(a) executing the monitoring procedure based on the actual data received from the control unit; and

(b) receiving at the control unit virtually in parallel to executing the monitoring procedure at least one input from an operator,

wherein the monitoring procedure further comprises the step of evaluating the data from the plurality of sensors and determining at least one setpoint value based on the evaluated actual data; and

wherein the monitoring procedure is carried out by a computer associated with the control unit.

32. (canceled)

33. (previously presented) The method according to claim 31, further comprising the step of: (c) sending at least one output from the control unit to the operator virtually in parallel to executing the monitoring procedure.

34. (previously presented) The method according to claim 31, wherein the actual data from the plurality of sensors comprises at least one of the group consisting of temperature, pressure, speed, and feed rate.

35. (canceled)

36. (previously presented) The method according to claim 31, wherein the determined at least one setpoint value is sent to the control unit.

37. (previously presented) The method according to claim 36, wherein the at least one setpoint value comprises at least one of the group consisting of temperature variations, pressure variations, and feed rate variations.

38. (currently amended) A control system for monitoring a control unit for an injection-molding machine, the control system comprising:

- (a) a plurality of sensors for sensing and acquiring actual values associated with the injection-molding process and transmitting the acquired values;
- (b) the control unit in communication with the plurality of sensors; and
- (c) a computer in communication with the control unit, wherein
 - i. the actual values transmitted by the plurality of sensors are received by the control unit and transmitted to the computer by the control unit,
 - ii. the transmitted actual values are evaluated by the computer,
 - iii. at least one setpoint value is determined by the computer, based on the evaluated actual values,
 - iv. the at least one setpoint value is transmitted by the computer to the control unit
 - v. at least one input is obtained from an operator,
 - vi. the at least one input is transmitted by the computer to the control unit and executed virtually in parallel with the execution of the monitoring process.

39. (previously presented) The system according to claim 38, wherein the plurality of sensors are not dedicated solely for use with the computer.